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April 6, 2005

Via Hand Delivery

Mr. Kenneth H. Blodgett
Environmental Protection Specialist
Section of Environmental Analysis
Surface Transportation Board
1925 K Street, N.W.
Washington, D.C. 20423

CURR
2005 APR -6 P 7:50

Re: **Tongue River Railroad Company, Inc. - Finance Docket 31086 (Sub-No. 3) -
Construction and Operation of the Western Alignment - Draft
Supplemental Environmental Impact Statement**

Dear Mr. Blodgett:

We are in receipt of a March 29, 2005 letter from Mr. Jeff Hagener, Director of the Montana Department of Fish, Wildlife & Parks ("DFWP") addressed to Mr. Patrick Davison of the Tongue River Railroad Company. The letter was also copied to the Surface Transportation Board. That March 29 letter responds to a March 11, 2005 letter from Mr. Davison to Mr. Hagener. In order to provide the Board with a complete record, we are attaching for your reference a copy of the March 11 letter (without its attachments) to which Mr. Hegener's letter responds, as well as a copy of the March 29 letter.

This exchange of correspondence is in response to a meeting between representatives of DFWP and TRRC on March 8, 2005. The meeting was also attended by certain other interested persons, including Speaker of the Montana House of Representatives Gary Mathews from Miles City, Montana House of Representative Mike Lange from Billings, and Mike Volesky, Policy Advisor for Governor Brian Schweitzer. The meeting was requested by Speaker Mathews with the intended purpose of discussing issues raised by DFWP concerning the Miles City Fish Hatchery and the review of previous analyses conducted by Womack & Associates on behalf of the Tongue River Railroad.

TRRC believes that continued progress has been made in its discussions with DFWP on the Fish Hatchery issue. The issues that have been resolved are set forth in point 2 of the March 11th letter, and include concerns previously raised regarding the adequacy of the alternative route analysis, protection of hatchery water supply pipelines, acceptable "Camelsback" slope stability analysis, block management, TRRC's weed control plans, and coal dust emission analysis. In addition, DFWP has now proposed, and

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TRRC agrees in principal, that the vibration concerns that DFWP has previously raised can be addressed without the need for further studies through the development of a methodology to monitor vibration impacts from the TRRC on the Fish Hatchery.

It also appears from Mr. Hagener's March 29 letter that DFWP is now going to move forward with the process of granting an easement to TRRC to cross state property. The terms of this easement, and the process for issuance of it, will require further discussion between the parties.

TRRC believes that the consultations between the parties are moving in a positive direction and intends to pursue further discussions with DFWP on these matters. As appropriate, TRRC will keep SEA advised of the status of this matter. At this stage, however, TRRC does not believe that any of the mitigation conditions proposed in the DEIS with respect to the Fish Hatchery require any adjustment.

Sincerely,

A handwritten signature in dark ink, appearing to read "Betty Jo Christian", with a long horizontal flourish extending to the right.

Betty Jo Christian
David H. Coburn

Attorneys for Tongue River Railroad Company, Inc.

cc: Ms. Victoria Rutson
Mr. Jeff Hagener
Rep. Gary Mathews
Rep. Mike Lange
Mike Volesky

Enclosures



March 11, 2005

Mr. Jeff Hagener
Director
Montana Fish Wildlife and Parks
1420 East 6th Avenue
Helena, MT 59601

Dear Jeff:

Thank you for your time and participation in the meeting on March 8th in Speaker Gary Matthew's office. I feel we had productive conversations and I believe they will lead to meaningful and timely solutions as they relate to the construction and operation of the Tongue River Railroad project (TRRC).

I am enclosing a copy of the easement application filed December 22, 1999 we spoke about during our meeting. Please call Doug Day at 406-252-5695 if you have questions or need further information about this request for easement.

The following summarizes my understanding of the issues we discussed and the position of the Montana Fish, Wildlife and Parks (FWP). Please review this information and let me know if I am incorrect in my understanding.

1. There seems to be a consistent suggestion that the data and information submitted to the STB is "stale" and further studies should be required.

The fact of the matter is the merits and the potential environmental affects of the TRRC has been studied extensively. The project has been the subject of two previous draft EIS reviews, two previous Supplemental draft EIS reviews, two prior final EIS documents, and the current Supplemental EIS review. The current environmental review has updated previous EIS analysis in order to ensure no significant changed circumstances and environmental affects have occurred. These reviews have been in compliance with the guidelines, rules and procedures of the STB, NEPA and MEPA.

2. Numerous issues have been resolved between FWP and TRRC, including the following:

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- Alternative routes have been explored and analyzed;
- Stability analysis of the "Camelsback" has determined that slope failure will not occur;
- Block management concerns will be dealt with in the right-of-way acquisition negotiation process;
- Concerns for the Miles City Fish Hatchery (MCFH) water supply pipelines from the Yellowstone River and the Tongue River have been resolved with an accepted mitigation plan;
- The proposed weed control plan has been accepted to address concerns of using herbicides to control weeds in the right-of-way in proximity to the MCFH; and
- Concerns for coal dust emissions from rail cars have been resolved after reviewing coal dust emission analysis, including consideration of dust settling times in transport and the low train speeds in the vicinity of MCFH.

3. FWP continues to raise concerns that the Department is uncertain whether vibrations caused by train movement near the MCFH will create biological impacts to the hatchery operations. While FWP readily admits that there is no empirical evidence to demonstrate the effect from vibration on the MCFH, FWP maintains that further studies should be conducted and perhaps bonding be established for any potential impact.

TRRC has conducted scientific studies that substantiate that there is no material vibration 260 feet or further from the existing BNSF rail line. Consequently, the fish hatchery building that is 1,060 feet from the proposed TRRC rail line would not be affected. Further, the fish holding ponds that are closest to the proposed TRRC rail line are 400 hundred feet from the rail line.

Since the MCFH was built after the existing rail line was constructed and operated by BNSF for many years, it seems reasonable to assume that if there was going to be detrimental impact from vibration of moving trains it would have become apparent by now. In fact, as we discussed in our meeting, FWP does not know whether vibrations from pumps and machinery being operated within the hatchery building cause impact to fish rearing.

Given that there is no vibration after 260 feet, it is unclear why FWP would demand further study on biological impacts from vibration created by moving trains on the rail line.

Our discussion ended without complete resolution of this matter, but there was general agreement to continue working for a solution. I also believe FWP has "backed away" from requiring extensive studies prior to the construction of the TRRC to analyze whether biological impacts would be caused from train operation.

Mr. Jeff Hagener
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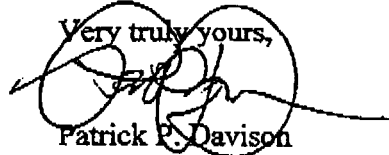
4. FWP has asserted that the potential for train derailments along the Tongue River and MCFH are a great concern to FWP.

As we discussed in our meeting, the potential of derailments in proximity to the MCFH are minimized by the slow train speed of 20 mph or less when operating next to the MCFH. Further, potential derailment impact along the Tongue River (the TRRC comes close or crosses the Tongue River in only two locations) is further mitigated by the mitigation measures proposed by the STB. These measures include: implementation of an Emergency Response Plan as required by state statutes; implementation of a Spill Prevention Plan in cooperation with appropriate federal, state and local agencies; compliance with the Hazardous Materials Transportation Act and its governing regulations, in the event hazardous materials are transported; and compliance with the Federal Railroad Administration hazardous materials regulations, along with FRA general rail safety regulations. These are the same plans that apply to the existing BNSF rail line that closely parallels the Yellowstone River.

FWP seemed to agree after our discussions, that the potential impacts of potential derailments are no longer a major issue of concern that would require mitigation beyond that proposed by the STB.

Jeff, while I am not sure what the final agreement is between TRRC and FWP relative to the vibration issue, I believe there is a willingness on the part of FWP to continue to work toward a reasonable solution. I also believe there is willingness by FWP to submit a letter within the next couple weeks to the STB indicating that FWP believes there can be resolution to the issues and a willingness to continue working with TRRC to craft such solutions. I will make myself available to work with you at your convenience to provide further information you feel is necessary for the FWP to prepare an update to the STB.

I hope I have captured the essence of our conversations and I look forward to working with you to resolve the vibration issue in a timely fashion. The TRRC will be a valuable addition to the economy of Montana and will be a good neighbor to FWP.

Very truly yours,

Patrick P. Davison

cc. Gary Mathews
Mike Volesky
Mike Lange

Enclosure



Montana Fish, Wildlife & Parks

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P.O. Box 200701
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FAX: 406-444-4952
Ref: DO0127-05
March 29, 2005

Mr. Patrick Davison
Tongue River Railroad
P.O. Box 80902
Billings, MT 59108-0902

Dear Mr. Davison:

This letter is written in response to your letter of March 11, 2005 regarding the meeting on March 8 to discuss issues surrounding the issuance of an easement across Fish, Wildlife and Parks (FWP) Miles City Hatchery for the Tongue River Railroad (TRR). As expressed in the March 8 meeting, FWP also believes with further discussion/negotiation that mutually agreed to solutions can be found to allow issuance of an easement across the FWP Miles City Hatchery property. Your letter summarizes the discussion into four points, which are responded to below.

1. FWP has provided comments to the Surface Transportation Board (STB) regarding the Supplemental EIS. FWP believes the comments were appropriate for STB consideration in its Supplemental Review. The STB must make the determination whether there is a need for additional studies to complete the EIS based on all of the information available. As the decision-maker, STB will ultimately make the determination on the issuance of a permit.

Rep. Lange floated the idea of some type of tax/assessment on coal being transported via the TRR. Those tax/assessment revenues could be deposited in an account earmarked for mitigation of impacts to fish, wildlife and recreation by the TRR. FWP applauds Rep. Lange's idea and believes it is worthy of further consideration.

2. FWP concurs with the points enumerated in #2. However, TRR needs to be aware that FWP currently holds three conservation easements on private land that will also be impacted by right of way needs. Two easements are on land owned by the Hirsch Ranch and the third is owned by the Bice Ranch. TRR negotiations with these landowners will require additional coordination with FWP and mitigation of impacts to the conservation values protected by the easements. If copies of these conservation easements are needed, please let FWP know.
3. FWP concurs that there is no empirical evidence to demonstrate whether vibrations caused by the train movement will create biological impacts. FWP has expressed that the studies conducted by TRR did not address all of FWP's concerns, thus the continued interest in conducting the necessary monitoring studies to make this determination. These concerns were not just from FWP Fisheries personnel, but also from a Department of Natural Resources and Conservation engineering review of the Womack study (Robert Kingery, April 22, 1999, attached). FWP cannot back away from its responsibility to ensure that the proposed line does not adversely affect the Miles City Hatchery. FWP and TRR need to agree to the appropriate equipment and methodology necessary to establish baseline and future monitoring of vibration at the facility. If the TRR is constructed and causes increased vibration above the baseline that is linked to reduced production at the hatchery, FWP expects TRR to assume responsibility for that impact and to

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mitigate and/or compensate FWP for the reduction. This will be a condition of any easement across the Miles City Hatchery as is discussed later in this letter.

4. FWP and the sportsmen and women of Montana have invested over \$10 million dollars in the Miles City Hatchery over the past 20 years to maintain its production capabilities. Total replacement of the hatchery would probably cost in the neighborhood of \$25 million. The hatchery produces fish that benefit the recreational economy of many towns in eastern Montana. FWP has a responsibility to protect that investment. Not surprisingly, indeed there is concern about the possibility of a derailment, and how the impact of a derailment will be mitigated. However unlikely a derailment may be, FWP believes that the responsibility to remediate any derailment should be a condition of the easement.

In addition to potential stress impacts and derailment concerns at the hatchery, TRR should be aware that the hatchery's physical improvements were made partially with federal funds provided by the U. S. Fish and Wildlife Service Wallop Breaux Act. These improvements must continue to serve the purpose for which the funding was provided. If they do not, for whatever reason, then they must be replaced with equally useful improvements or repayment made to the granting agency. In short, if the usefulness of improvements made with federal money is diminished, then the federal program would have to be compensated in some way for the loss. Mitigation usually either means providing replacement property of equal or greater program value or outright payment for damages. FWP takes this obligation very seriously as failure to address federal aid issues can reach beyond the individual site impacts to the entire agency's federally funded programs.

As requested at the March 8 meeting, FWP will begin the process for granting an easement across FWP lands. The process involves several steps including: obtaining a current appraisal of the property to be impacted (TRR will be responsible for the cost of the appraisal); negotiating the terms of the easement; addressing the federal aid requirements for disposition of property acquired, upgraded or maintained with federal funds; preparing an environmental assessment and soliciting public comment on the easement; and presenting the proposed easement to the FWP Commission for its action.

Negotiation of the terms of the easement will include:

- a. Installation of the appropriate equipment and data collection to establish a baseline for vibration now experienced throughout the hatchery. Sustained monitoring will be required during construction and for a period of time after TRR is in operation.
- b. Provisions that hold TRR responsible for mitigation of any impacts experienced as a result of construction or TRR operation. These provisions should describe mitigations that may be utilized. Because of the uniqueness of the hatchery operation, FWP believes that clear language in the easement regarding mitigations would be more appropriate than the STB arbitration process. With TRR's confidence that there will be no impacts to the hatchery from the TRR operation, there should not be concerns with more specific commitments to mitigation. FWP continues to believe that TRR putting up a bond sufficient to finance moving of the hatchery elsewhere or to mitigate any damages/loss in production at the current site would alleviate most of the concerns that still exist and should be seriously considered as an alternative.
- c. A one-time up-front easement payment and/or a provision for an annual fee to be paid to FWP by TRR for the value of the land taken, damages and depreciation, and any impediments to additional remaining lands as a result of the easement. Since the hatchery improvements were constructed, updated and maintained with federal aid funds, the federal aid requirements for

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disposition of property encumbered with federal aid dollars must also be met, if appropriate. FWP is requesting further information and guidance from the United States Fish and Wildlife Service on what the federal aid requirements would be in this instance.

- d. A provision that if the TRR is not completed, and the rights under the easement not fully exercised within five years, or if at any time the rail line ceases to operate for a full year, the easement will be null and void, and TRR shall be responsible for removing any track and appurtenances and returning the lands to pre-existing conditions.
- e. BLM approval of the easement grant by FWP. A provision in the 168 acre 1987 land patent issued by the USA to FWP requires that if the land upon which the hatchery is located ever ceases to be used for hatchery purposes, it will revert to the USA. Therefore, any grant of easement to the TRR will need to be approved by the BLM prior to FWP approval. A 1958 deed for 70 acres was granted to FWP from Miles City. Miles City acquired that land via federal patent also; therefore, the stipulations in that patent must be thoroughly examined to assure FWP that any easement granted will be in compliance with that original patent also. If TRR needs copies of the acquisition documents, please let me know.

FWP will keep TRR apprised of the status of the easement review process. The primary contact for status reviews will be Debby Dils, Land Section Supervisor (406-444-3939). A copy of this letter has been forwarded to the STB per your request that FWP update them on the progress of our discussions.

Sincerely,



M. Jeff Haggner
Director

Enc.

c: Rep. Gary Matthews
Rep. Michael Lange
Mike Volesky
Steve Doherty
Surface Transportation Board
Debby Dils

DEPARTMENT OF NATURAL
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GOVERNORDIRECTOR'S OFFICE (406) 444-2074
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STATE OF MONTANA

WATER RESOURCES DIVISION (406) 444-6601
TELEFAX NUMBERS (406) 444-0533 / (406) 444-591848 NORTH LAST CHANCE CULCH
PO BOX 201601
HELENA, MONTANA 59620-1601

April 22, 1999

To: Gary Bertellotti

From: Robert K. Kingery, P.E. *RK*

Re: Some comments and questions on the Tongue River Railroad - Miles City Fish Hatchery Report

Following are some written comments regarding the Tongue River Railroad Report. You will find that most of my comments are directed towards Appendix 6. The procedure presented in Appendix 6 was difficult to follow, and yielded results that require further explanation.

Site Background

From our conversation, and the aerial photograph, it appears that the proposed railroad will be approximately 400 feet from the closest fish pond, as compared to the 800 foot distance from the existing railroad. The Tongue River Railroad Report attempts to describe the potential impacts that the reduced distance may have on fish behavior.

Basic Seismic information

An impulse at the earth's surface will create several wavetypes (compressional, shear, and various surface waves). For the compressional and the shear waves the wavefront (sound) is an expanding sphere as it expands from its source in a homogenous media. As the sphere expands, the energy density decreases proportionately with the square of the distance from the source. This is called spherical divergence (Sheriff, 1984). The surface wave energy density will decrease linearly with distance through a similar phenomena called cylindrical divergence. Wave energy will also be absorbed by the media that it passes through. The amplitude of these waves decreases by the factor $e^{-\alpha r}$, where " α " is the attenuation coefficient, and " r " is the distance from the source (Dobrin, 1976). The coefficient α is a function of both frequency and velocity. The dependency of α upon frequency causes the high frequency components of a propagating waveform to be attenuated much more rapidly with distance than the low frequency components.

If the advancing compressional wavefront encounters a boundary with different acoustic properties, some of the wave is reflected, and some is transmitted. At non-orthogonal angles of incidence, some of the compressional wave is also converted into reflected and transmitted shear waves.

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BUREAU
(406) 444-6637WATER OPERATIONS
BUREAU
(406) 444-0860WATER RIGHTS
BUREAU
(406) 444-6610

General Observations

It may be surmised that the transmitted sound from the proposed railroad will be greater in both magnitude, as well as frequency of occurrence when compared to existing conditions at some locations. The objective of the report by Womack & Associates, is to assess whether or not it is likely that this increased sound level will affect the spawning behavior of the fish in an adverse fashion. SK Geotechnical was retained to make numerous vibration measurements at varying distances from the existing railway, the highway, and from a strikeplate. Cooksley Geophysical then analyzed this data to determine the probable vibration levels at the hatchery, and Mr. James Anderson attempted to correlate these vibration levels with fish behavior. The SK and Cooksley reports were primarily focused on computing peak particle velocities, while Mr. Anderson required a parameter called the "sound pressure level" (SPL) to determine the potential effects on fish. Most of my comments are centered upon the methodology used by Mr. Anderson to convert from the peak particle velocity to a sound pressure level.

General Comments

1. Is it possible to directly measure SPL, and calibrate it to the existing railway? This would seem preferable to attempting to directly calculate it from the seismic data.
2. Will the frequency of the transmitted sound be significantly different from the proposed railway at a distance of 400 feet, when compared to the existing 800' distance, and if so, what effect will this have on the fish. If the trains are primarily a source of low-frequency sound, then this effect will probably not be significant. If, however, the trains include significant high frequency components, it may be worth investigating.
3. It appears that the 400' distance is the closest distance to one pond. The average distance from the proposed railway appears to be similar to the average distance from the existing railway. If this observation is accurate, then the potential effects on most of the hatchery will be primarily in terms of frequency-of-occurrence, rather than magnitude. This could, nevertheless, be significant if the hatchery is already affected by the existing railway.

Comments on Appendix 4 (SK report)

Although I am not familiar with the nuances of vibration monitoring, it appeared that the SK field work was well laid out. They measured sufficient information from the railway and the highway to allow a reasonable estimate of likely vibration levels. They also collected this information in relevant locations, made an effort to account for possible differences in alluvial and bedrock vibration, and conducted some calibration measurements using a strikeplate. Following are my comments.

1. The Fig-1 Map appears to be missing several of the ponds that are closest to the proposed railway alignment when compared to the aerial photograph.

2. Several of the vertical displacement values in Table 1 seem anomalous. In particular, the 10/8/98 11:56 value (0.008 inches) seems large when compared with surrounding values. This may be typical, I am not very familiar with vibration monitoring data.
3. What is the "peak sound" value of 76 – 78 dB on the records? It does not change much between records.

Comments on Appendix 5

This report seemed to provide a reasonable estimate of the anticipated vibration levels out to a distance of 200 feet from the source (Appended Item 2). Both the procedure and the conclusions seemed reasonable.

Comments on Appendix 6 (J. Anderson report)

The procedure that Mr. Anderson was used was difficult to understand. Following is my interpretation of that procedure, in an outline format:

Summary of Procedure

- A. Compute $SPL = 20 \log(P/1)$ $P = \text{Sound Pressure (Pascals)}$
 These values are summarized in Table 1, P.5. The equation is simply the definition of a decibel for changes in amplitude.

1. $P = \rho c k V_i / (2^{0.5})$
 - $\rho = \text{Density of material}$
 - $c = \text{Seismic velocity of material}$
 - $k = \text{Calibration factor (0.009)}$
 - $V_i = \text{Measured peak velocity at distance } r$

This equation from p. 4, converts a measured peak velocity to a sound pressure. This is accomplished by multiplying the peak velocity by a calibration factor "k", to correct it (it is not clearly stated why this needs to be done), multiplying it by the acoustic impedance ρc , and then converting the resulting peak power value to an rms value by multiplying it by 0.707.

- a. "k" appears to be a factor that relates the difference between theoretically derived peak particle velocities and measured peak particle velocities.
 - b. The theoretical peak particle velocity V_{peak} (p.3) is derived from an equation for displacement D_i (p.1) that includes the applied force G (eq.1), a variety of the wave equation (eq.2), and what appears to be a factor that accounts for divergence.
- B. Derive regression equations between the Log of distance from the source, and the computed SPL values. These regression equations are intended to mimic attenuation with distance.
 - C. Estimate "transmission loss", or that portion of the seismic energy that is reflected upon encountering the boundary between the pond water and the earth.

- D. Combine the "transmission loss" with the regression equations to derive a refined regression equation that computes the SPL in the pond based upon the distance from the source.

Comments

Following are my comments on the report. I have listed the page numbers that the comments refer to. The comments are in no particular order.

1. Is the correct formulae for a decibel $20 \text{ Log}(P)$, or is it $10 \text{ Log}(P)$? The first form is for amplitude, the second form is for energy or power. I am not sure which applies here. [p.1, p.4]
2. Is it appropriate to use the rms value for pressure? I suspect that this is correct, but the value should be the same as that used to measure SPL in the biological assessment portion of the report (Table 2). [p.3]
3. The equation for "P" is based on the statement that the "peak sound pressure is directly proportional to the particle velocity". The acoustic impedance is chosen as the proportionality constant. The use of the acoustic impedance maintains dimensional equality, but "proportional" is not necessarily the same as "equivalent". While this formulation may be valid, I am not familiar with it, and it is not referenced.[p.3]
4. Why is it necessary to calibrate the measured particle velocities to a theoretically derived one? This is not explained. It would seem that the measured values are far more reasonable than a theoretically derived estimate. I do not understand why "k" is 0.009, instead of 1.0. If "k" can be assumed to be 1.0, then the computed SPL will be significantly higher, and all of the work conducted to compute the theoretical V_{peak} would seem unnecessary. For example, if "k" is assumed to be 1.0, and a peak particle velocity of 0.02 in/sec (.000508 m/sec) is used, the resulting sound pressure level is 718 Pa (eq. For P on p.4). This converts to 57 dB — significantly higher than the 16.2 dB value in Table 1.
5. It is stated that the measured frequency is $2\pi\omega$ (p.3), where ω is the angular frequency. The relationship that I am familiar with is $\omega=2\pi f$ (Sheriff, 1984), where "f" is the frequency in Hz. This relationship would then reveal a representative value for ω of 360, rather than 10, as was computed on p.3. The resulting change in "k" would be proportionate.
6. I am not familiar with the form of the wave equation given in eq. 2, but it appears reasonable.
7. The assumption that $\Delta t=0.002$ sec, may be reasonable, but must be a relatively uncertain value. This uncertainty will affect "k" in a proportionate manner.[p.2]
8. I am not familiar with the formulation for D_r , but it appears that the denominator accounts for divergence, but not absorption.[p.2]
9. The procedure that is used to derive the theoretical V_{peak} is valid only for compressional waves. This assumption may be reasonable since shear waves can not propagate in fluid, but can shear or surface waves be significant vehicles for underground sound transmission?

10. How is the predominant frequency measured? Is this frequency representative of the compressional waves that are used in this analysis, or is it unduly affected by other waveforms? The assumptions made with regards to frequency will affect the computed "k" factor both in terms of the angular frequency used in the wave equation, and the attenuation coefficient that seems to be missing.
11. The loss of transmitted energy at an acoustic interface is due to reflection, not refraction [p.6].
12. The form of the equation for α on p.6 is valid for either:
 - a. The amplitude of a wave after has passed through an acoustic interface both directions.
 - b. The energy of the wave transmitted through an acoustic interface one direction.

Is it appropriate to use this form of the equation for sound pressures?
13. I do not understand why $P_{\text{water}} = P_{\text{solid}} \alpha^{0.5}$. Is the $\alpha^{0.5}$ term an attempt to change from the energy form for α to the amplitude form? If so, the equation for α is incorrect. If the energy form is appropriate, it would seem that $P_{\text{water}} = P_{\text{solid}} \alpha$ would be the correct form for the equation.[p.6].
14. The values for density and velocity in soil and water all seem reasonable.
15. The derivation of the equations at the bottom of page 6 is not clearly described.
16. The regression equations for the train and truck on P.5 seem counter-intuitive. Why does the truck have a larger intercept coefficient than the train? What are the error bounds for these equations?
17. I could not determine how the final estimated sound level of 5 dB from the summary in the text was computed. Where does this estimate come from?
18. It is stated on p.3 that the density drops out of the derivation for sound pressure. This does not seem to be the case, since density is used to compute the sound pressure.

References

- Dobrin, M.B., Introduction to Geophysical Prospecting, McGraw-Hill, New York, 1976.
- Sheriff, R.E., Encyclopedic Dictionary of Exploration Geophysics, Society of Exploration Geophysicists, Tulsa, OK, 1984.
- Wornack & Associates, Miles City State Fish Hatchery Investigation To Assess Potential Effects of the Construction and Operation of the Tongue River Railroad, Billings, MT, March 22, 1999.